

# Tire Pressure Monitoring System

## User manual for TBO

(Universal for configurations up to 18 Sensors)

Congratulations to your purchase of *TIRELIFE*, which will be a valuable addition to your vehicle for helping you to drive safely. *TIRELIFE* automatically monitors your vehicle tires, and will immediately alert you of abnormal tire pressure and/or temperature, thereby providing timely warnings to you to take corrective actions. In addition, *TIRELIFE*'s digital display makes tire pressure maintenance easy, and you no longer need to manually check tires with a pressure gauge. Consequently, your tires can easily be kept in an optimal operating condition. The resulting benefits are obvious: reduced uneven tire wear, reduced severe tire damages, reduced air loss related tire failures, increased tire lives, improved fuel efficiency, improved vehicle braking and handling. Best of all, *TIRELIFE* can help you to drive with enhanced vehicle safety on the road, and with less worry of flat tires and blowouts.

### **1. Packing List**

1. 1 Display Unit
2. 6 Sensor-Transmitter

## 2. TBO-106 Specification

### SENSOR

Battery Voltage	3V
Battery Shelf Life	150,000~200,000km or 2~3years
Battery Capacity	250mAh
Transmit Power	$\leq -35\text{dBm}$
Modulated Mode	ASK
Static Current:	1.6uA ~ 2uA
Transmitting Current	0.7mA ~ 1mA
Storage Temperature Range	-45°C ~ 135°C
Operating Temperature Range	-40°C ~ 125°C
Operating Humidity	100 %
Operating Frequency	433.92 MHz
Frequency Drift over Temperature	$\pm 50\text{Hz}$
Pressure Monitoring Range	0 ~ 199PSI
Pressure Reading Accuracy	

Temperature(°C)	Pressure Reading Accuracy (PSI)
125	$\pm 3$
25	$\pm 2$
0	$\pm 2$
-10	$\pm 2$
-40	$\pm 3$

Temperature Reading Accuracy	$\pm 5^\circ\text{C}$
Sensor Weight (Including Valve)	35g

### MONITOR

Power Voltage	24VDC
Operating Current	$\leq 40\text{mA}$
Operating Temperature	-20°C ~ 85°C
Humidity	Up to 95%

### 3. Display Installation



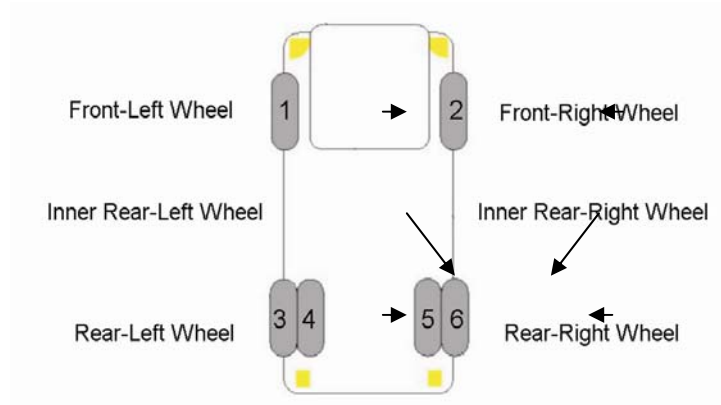
- a) Place the Display to a desirable location and secure with the both-sided adhesive strip or other user preferred means.
- b) Before fix the Display, clean the surface of the location carefully. Then stick the Display on.  
Connect the power line to Cigar jack in driving room

### 4. Sensor Installation

#### Sensor ID Number & Location

Each Sensor module is marked with an ID number, which is pre-set at the factory for easy installation. Please refer to it for your unique vehicle configuration before proceeding with the Sensor Installation.

By example, the following (Figure 3) represents a 6-tire vehicle system. The icon indicates the Sensor number and location for this specific configuration; in this case, it is labeled No.1 through No.6.



## Sensor Mounting

Depending on the style and size of the wheel, as well as the location of the wheel on the vehicle, mounting of the Sensors will vary. The following are examples of the more common mounting methods. Installation procedure is generally different for Single and Dual mounted wheels.

**NOTE:** Please consult the factory for additional mounting techniques.

### A) Typical Sensor Installation for Front and/or Single Tires

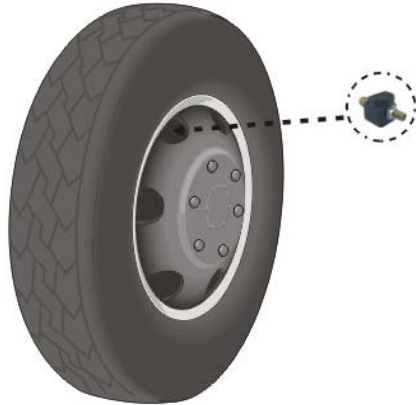
Step 1. Directly screw the correctly numbered Sensor onto both front-wheel valve stems as shown in Figure 4.

Step 2. Tighten side screw nail not to stolen and loose.

Step 3. Spray soap water valve to check air leak.

Step 4. Inflate or deflate air to adjust desired air pressure

**NOTE: Clean the valve-stem threads prior to installation to prevent harm to the Sensor fittings.**



Front wheel sensor could be screwed into the valve stem directly.



## B) Typical Sensor Installation on Dual Tires

**Step 1:** SHOULD SEPARATE OUTSIDE TIRE FROM DUAL TIRE.

**Step 2:** Directly screw the correctly numbered Sensor of inside rear wheel and outside rear wheel. Tighten side screw nail not to stolen and loose.

**Step 3:** Spray soap water valve to check air leak.

**Step 4.** Inflate or Deflate air to adjust desired air pressure.

**Step 5.** Remount tire.



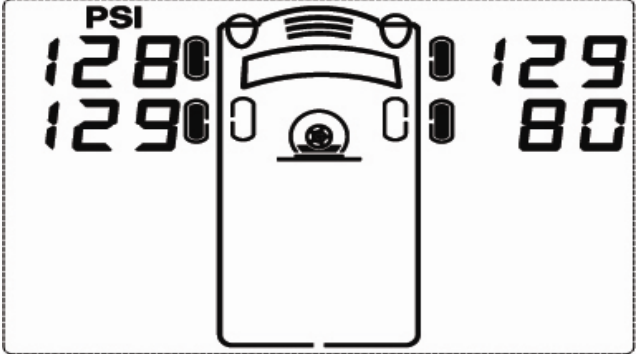
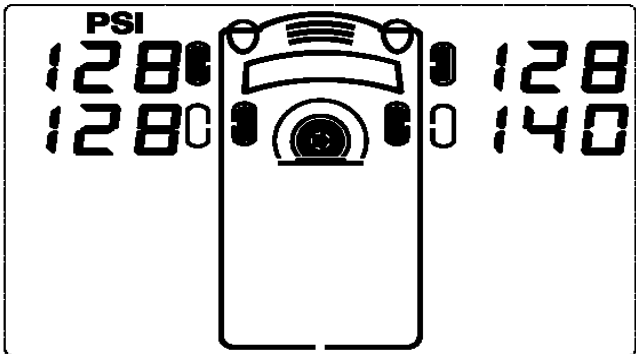
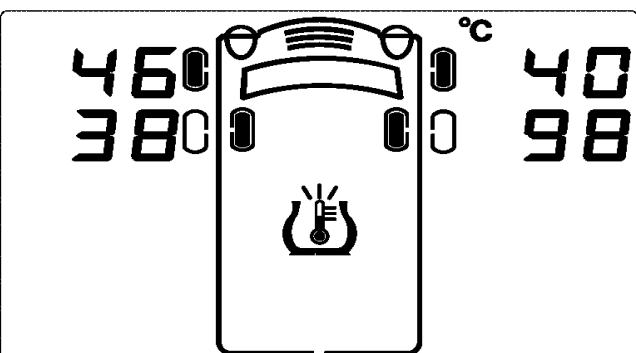
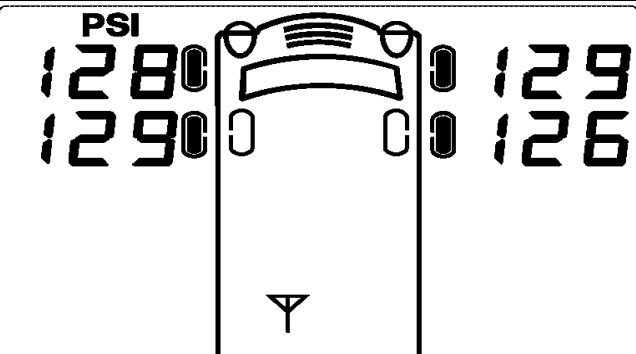
Sensor Installation on Dual Tires

## 5. Operation

After installation, the system operates automatically and continuously. When vehicle power turns on, the display will show the current tire pressure continuously. And for rear double wheel displayer. show outside and inside pressure for every 10second.



Upon detection of abnormal tire pressure and/or temperature, the system will display one of the following warnings.

<p><b><u>Low Tire Pressure</u></b></p> <p>Tire icon indicating the pressure is too low or leaking air rapidly. (Alarm rings for 8 seconds.)</p>	
<p><b><u>High Tire Pressure</u></b></p> <p>Tire icon is full indicating the tire pressure is too high. (No audible alarm).</p>	
<p><b><u>High Temperature</u></b></p> <p>The high temperature icon is visible indicating tire temperature is too high. (No audible alarm).</p>	
<p><b><u>No Sensor Signal</u></b></p> <p>Can not receive the signal from the Sensor. (No audible alarm).</p>	

## 6. Setup the warning threshold

### 1). LOW PRESSURE SEPUP

Press and hold the Setup Button and Control Button together for 5 seconds, the system enters the Setup Mode, then release the button.

Factory already pre-setup 100PSI. If you want to change, you press button 1 and fix.

### 2). HIGH PRESSURE SEPUP

Press button 2 one more, Factory already pre-setup 150PSI, If you want to change, you press button 1 and fix.

### 3). HIGH TEMPERATURE SETUP

Press button 2 one more, Factory already pre-setup 90C, If you want to change, you press button 1 and fix.

### 4). PRESSURE UNIT SETUP

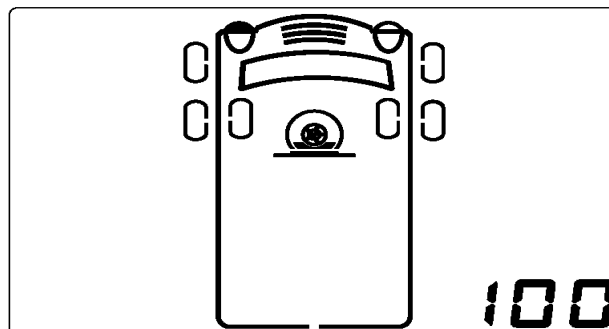
Press button 2 one more, Factory already pre-setup PSI, If you want to change BAR, You press button 1 and fix.

### 5). TEMPERATURE UNIT SETUP

Press button 2 one more, Factory already pre-setup C, If you want to change F, You press button 1 and fix.

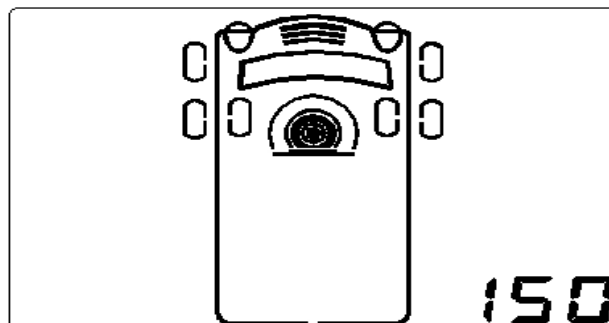
#### Low Pressure

Warning threshold can be set to in-between 19PSI to 140PSI. Default is 100PSI.



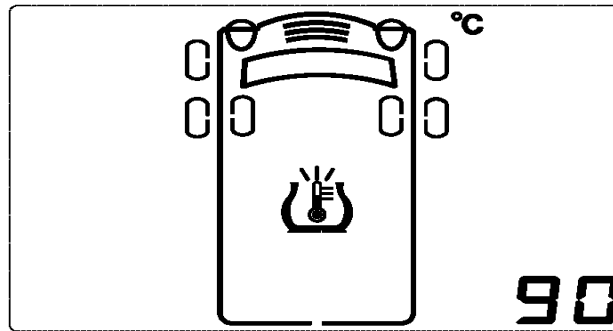
#### High Pressure

Warning threshold can be set to in-between 107PSI to 199PSI. Default is 150PSI.



### High Temperature

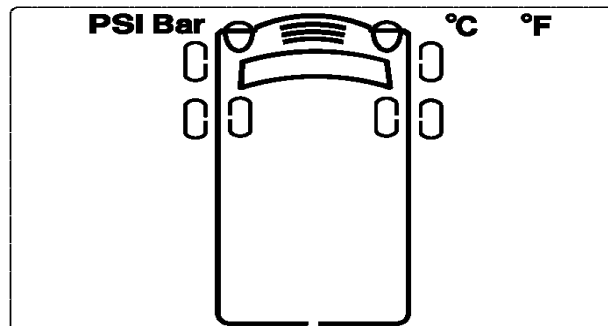
Warning threshold can be set to in-between 70°C to 110°C. Default is 90°C.



### Unit selection

There are PSI Bar C and F available.

- (1) PSI     BAR
- (2) F       C



Press control button again and exit setup mode.

### **NOTES:**

- a) By pressing-and-holding the Control Button, the screen will change more rapidly.
- b) It is recommended that the low-pressure threshold be set at least 0.5 Bar (7.5 PSI) or more above the designated pressure.

## **7. Retrain System after Tire Rotation**

### **SETUP MODE**

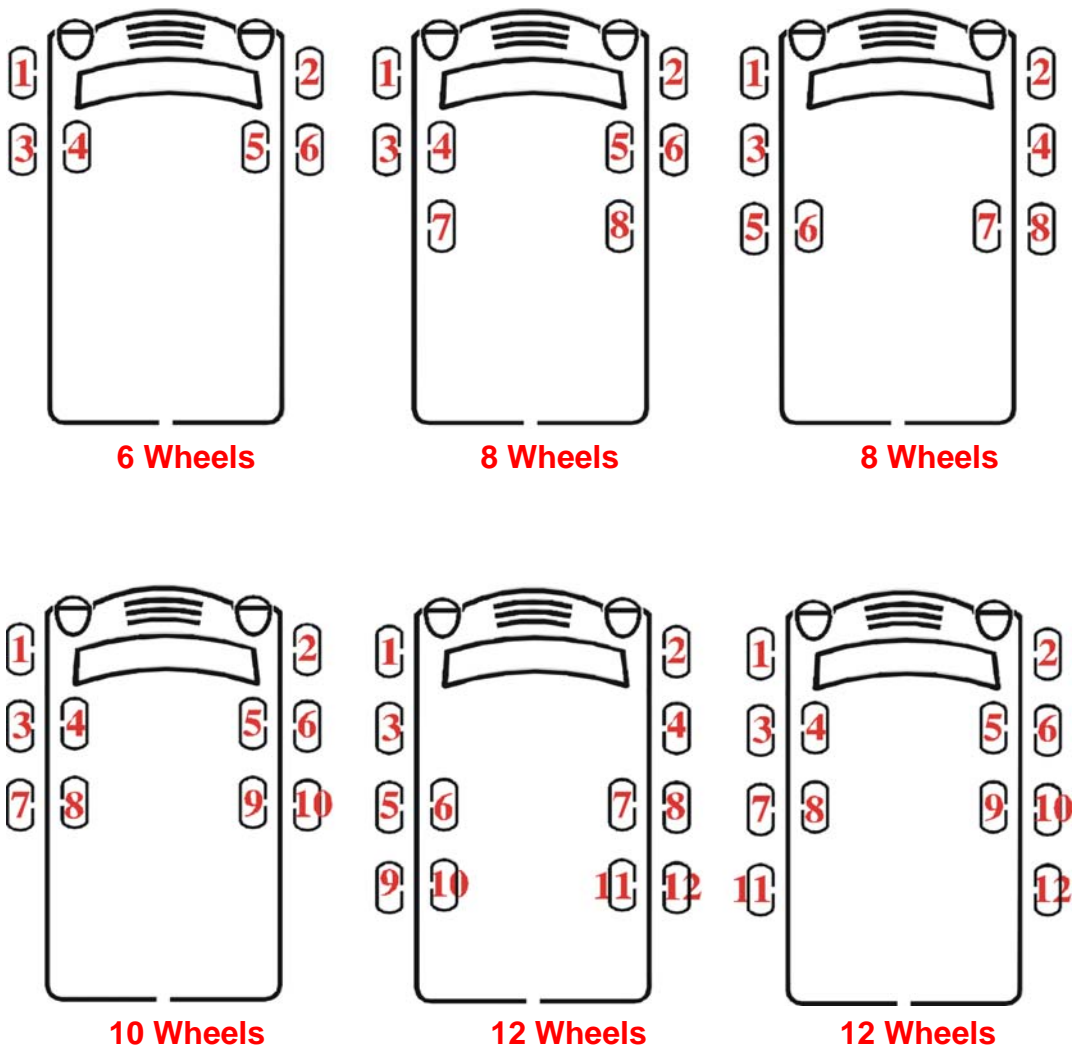
If a sensor's position is changed or replaced, the monitor will recognize the sensor's new position (or set the sensor on the same wheel location as before). To do so follow the instructions below:

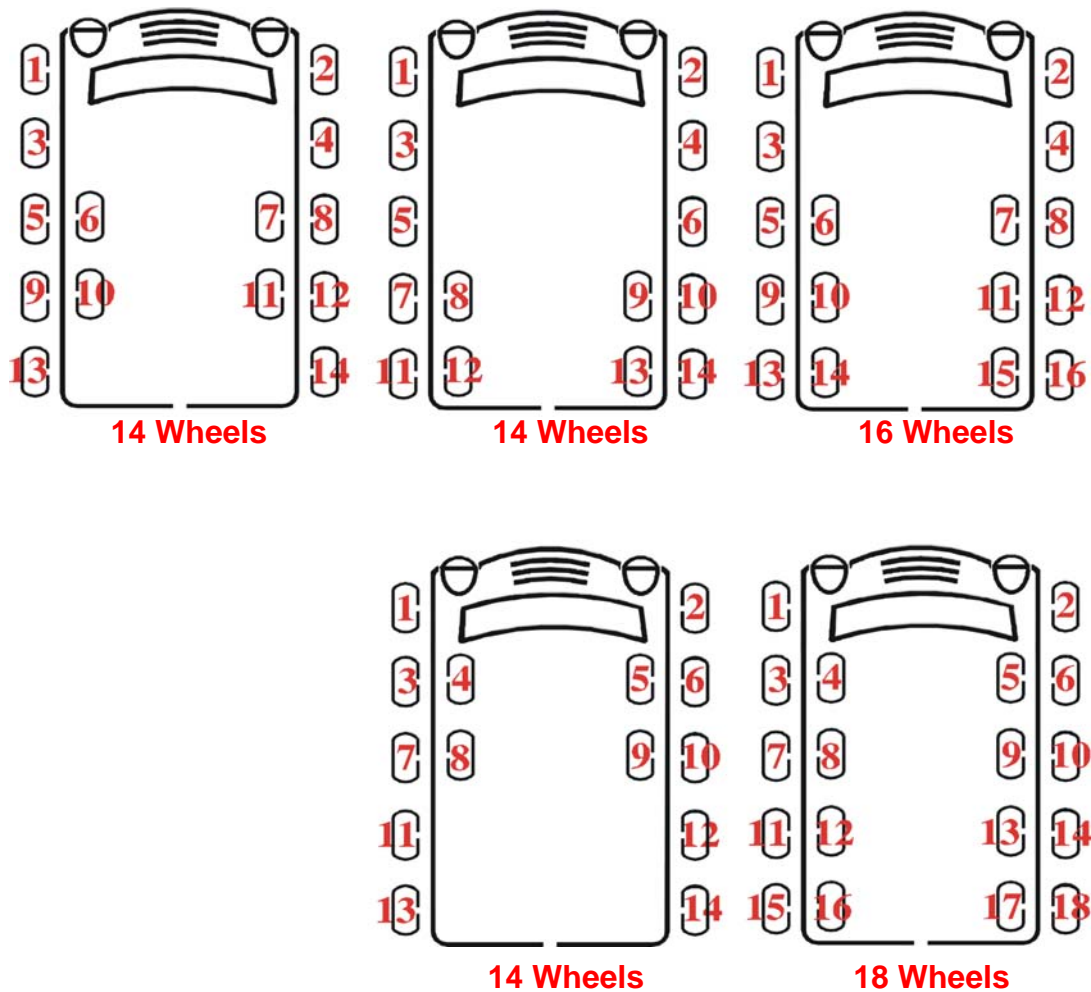
- Press and hold the setup button and control button at the same time for 10seconds(passed by the Warning Setup mode), the system enters Tire Setup mode. The No. 1 tire indicator starts blinking.
- Release some air from the No.1 tire, which triggers its sensor to send out a signal. Upon receiving the signal, the system sets up No.1 tire location mapping and then moves on to the No. 2 tire (No. 2 indicator blinks).



- Repeat above step for the remaining tires. The setup order must always be tire No. 1, No. 2, No. 3, No. 4...No.6. After successfully retraining the No. 6 tire the system exits the Tire Setup mode automatically. More than 6 wheels system is the same.
- Press the setup button can skip current location and moves to next location.
- Refill tires to the proper air pressure.
- Turning vehicle power off before finish cancels the setup.

## 8. Wheels Vs Sensor ID





#### **SAFETY & USE PRECAUTIONS:**

- Clean the valve stem threads prior to installation to prevent damage to sensor fittings.
- Do not attempt to tamper with the parts in the sensor; it will void the warrantee and disrupt the function of the system.
- Do not attempt to fill the tires with any chemicals such as leak-proof compounds. Nae Woi Korea.,Ltd is not responsible for sensor malfunction that results from the use of this or any other chemical used inside the tire.
- Do not allow yourself to be distracted by utilizing the control button to check tire status while driving. This device is designed to alert the driver if tire pressure or temperature reaches a warning threshold. Distracted driving is extremely dangerous; maintain 100% of your attention on the task of driving.
- This product is meant to aid the driver by monitoring the pressure and temperature in the vehicle tires. It is not designed to control or prevent accidents. The safe operation of any motor vehicle is the strict responsibility of the driver.

**FCC Statement**

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference. and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

**Caution**

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

**Labeling**

FCC ID: F2OTBO

Model: TBO

Applicant: Nae Woi Korea.,ltd.